

WHAT IS CLAIMED IS:

1. A push network comprising means for copying information held in a packet sent from an information providing terminal and for generating a plurality of packets with the same information, and means for distributing the packets thereby generated to a plurality of user terminals; wherein:

means is provided for adding to a packet a content identifier for identifying the content of the information held in that packet, or for adding to a packet one or both of this content identifier and a category identifier for identifying the category to which the content belongs; and

the aforementioned distributing means comprises means for deciding, in accordance with the aforementioned content identifier, or in accordance with one or both of the aforementioned content identifier and category identifier, whether or not to distribute that packet to a given user terminal.

2. A push network as claimed in Claim 1, wherein means is provided for adding a content identifier to a packet, and the distributing means comprises means for deciding, in accordance with the content identifier, whether or not to distribute that packet to a given user terminal.

3. A push network as claimed in Claim 2, wherein the decision means includes:

a table, provided in correspondence with a destination, in which content identifier related information has been registered; and

means for passing a packet if the content identifier added to that packet matches the content identifier related information registered in the table.

4. A push network as claimed in Claim 3, wherein means is provided for

registering content identifier related information in the table in accordance with notification from a user.

5. A push network as claimed in Claim 3, wherein means is provided for
5 deleting from the table content identifier related information that has been registered in the table, once a series of packets to which that content identifier has been added have passed.

6. A push network as claimed in Claim 5, wherein the deleting means
10 comprises means for deleting content identifier related information from the table after a prescribed time interval has elapsed after the series of packets have passed.

7. A push network as claimed in Claim 3, wherein means is provided for
15 deleting from the table, at a predetermined time, content identifier related information registered in the table.

8. A push network as claimed in Claim 3, wherein the decision means
comprises means for receiving a packet requesting deletion of content identifier
20 related information, and for deleting the corresponding content identifier related information from the table.

9. A push network as claimed in Claim 8, wherein the user terminal
comprises means for transmitting a packet requesting deletion of content
25 identifier related information.

10. A push network as claimed in Claim 8, wherein the information
providing terminal comprises means for transmitting a packet requesting

deletion of content identifier related information.

11. A push network as claimed in Claim 3, wherein the decision means comprises means which, if no packet having the same content identifier as that
5 of passed packets arrives within a fixed time interval after the final packet has passed, deletes from the table the information relating to that content identifier.

12. A push network as claimed in Claim 11, wherein the information
10 providing terminal comprises means for transmitting, within the aforementioned fixed time interval, a dummy packet to which a prescribed content identifier has been added.

13. A push network as claimed in Claim 3, wherein the decision means
15 comprises means for deleting content identifier related information from the table when it receives a packet giving notification that receiving has been completed, said packet having been sent from a node or user terminal that has received packets to which the corresponding content identifier has been added.

20 14. A push network as claimed in Claim 4, wherein the registering means comprises means for receiving a request packet in which has been written a content identifier relating to content desired by a user, and means for registering content identifier related information in the aforementioned table in accordance with the content identifier written in the request packet received
25 by this receiving means.

15. A push network as claimed in Claim 4, wherein one registering means is provided for a plurality of decision means, and this registering means

comprises: means for storing, in correspondence with content, information indicative of the information providing terminal constituting the source of packets with that content; means for searching for a route from that information providing terminal to a given user terminal in accordance with the stored contents of this storage means; and means which, in accordance with the result of the search conducted by this searching means, registers content identifier related information notified by a user, in the tables of the decision means along the route in question.

10 16. A push network as claimed in Claim 4, wherein a separate registering means is provided for each decision means.

17. A push network as claimed in Claim 16, wherein a registering means comprises: means for storing, in correspondence with content, information indicative of the information providing terminal constituting the source of packets with that content; means for searching, in accordance with the stored contents of this storage means, for a route from that information providing terminal to a given user terminal; and means for transferring an arriving request packet in accordance with information, written in that request packet, regarding the route to the information providing terminal; wherein this transferring means includes means which, when there is no information in an arriving request packet regarding the route to the information providing terminal, writes said information in that request packet, in accordance with the routing information found by the search means.

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18. A push network as claimed in Claim 16, wherein a registering means comprises: means for storing, in correspondence with content, information indicative of the information providing terminal constituting the source of

packets with that content; means for searching, in accordance with the stored contents of this storage means, for a route to the information providing terminal written in an arriving request packet; and means which, in accordance with the results of the search by this search means, updates the
5 routing information in the aforementioned request packet.

19. A push network as claimed in Claim 16, wherein a registering means comprises means for storing, in correspondence with information relating to the address of an information providing terminal, said information having been
10 written in an arriving request packet, information relating to an output port to be used for routing.

20. A push network as claimed in Claim 16, wherein a registering means comprises: means for sending an arriving request packet to all output routes
15 connected to the local node; means for writing in the request packets information relating to the sending history of this sending means; means for detecting, in accordance with this sending history information, the number of hops made by a request packet; and means which, when the same packet arrives from a plurality of routes, selects one of these packets in accordance
20 with the results obtained by this detection means..

21. A push network as claimed in Claim 1, wherein means is provided for temporarily storing a packet which the decision means has decided to distribute.

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22. A push network as claimed in Claim 21, wherein the temporary storage means comprises means for temporarily storing a packet to be transferred to a transfer destination when the packet acceptance rate of that packet transfer

destination is less than a prescribed rate.

23. A push network as claimed in Claim 1, wherein a plurality of information providing terminals are provided, and there is provided means
5 which causes a token to circulate among these terminals, this token giving permission to an information providing terminal to send; and means is also provided which causes content to be sent from the information providing terminal that has received the token.

10 24. A push network as claimed in Claim 1, wherein transit nodes are arranged hierarchically between information providing terminals and user terminals, and a plurality of information providing terminals or transit nodes are provided in each layer of this hierarchy; wherein each layer of the hierarchy comprises: means for collecting traffic information for that hierarchical layer;
15 means which gives sending permission to an information providing terminal and/or transit node in accordance with the traffic information collected by this collecting means; and means which causes content to be sent from the information providing terminal and/or transit node that has received sending permission.

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25. A push network as claimed in Claim 1, wherein means is provided for adding to a packet one or both of a content identifier and a category identifier; and the distributing means comprises means for deciding, in accordance with this content identifier and/or category identifier, whether or not to distribute
25 that packet to a given user terminal.

26. A push network as claimed in Claim 25, wherein the decision means includes a table, provided in correspondence with a destination, in which has

been registered information relating to a category identifier and/or to a content identifier corresponding to this category identifier; and also includes means which passes a packet if the category identifier given to that packet matches the category identifier related information registered in the table, and if the
5 content identifier given to the packet matches the content identifier related information registered in the table in correspondence with this category identifier.

27. A push network as claimed in Claim 26, wherein means is provided for
10 registering in the table, in accordance with notification from a user, information relating to a content identifier, and/or a category identifier, corresponding to information content which that user wishes to receive, or to information content which the user wishes to reject.

15 28. A push network as claimed in Claim 26, wherein means is provided for registering in the table, in correspondence with a destination and in accordance with notification from an information provider, information relating to a content identifier, and/or a category identifier, corresponding to information content which that information provider wishes to distribute or to prohibit from
20 being distributed.

29. A push network as claimed in Claim 26, wherein means is provided for deleting from the table information relating to a content identifier and/or a category identifier registered in the table, once a series of packets containing
25 that content identifier and/or category identifier have passed.

30. A push network as claimed in Claim 29, wherein the deleting means comprises means for deleting from the table information relating to a content

identifier and/or a category identifier after a prescribed time interval has elapsed after the series of packets have passed.

31. A push network as claimed in Claim 26, wherein the deleting means
5 comprises means for deleting from the table, at a predetermined time, information relating to a content identifier and/or a category identifier registered in the table.

32. A push network as claimed in Claim 26, wherein the decision means
10 comprises means for receiving a packet requesting deletion of information relating to a content identifier and/or a category identifier, and for deleting the corresponding information from the aforementioned table.

33. A push network as claimed in Claim 32, wherein a user terminal
15 comprises means for transmitting a packet requesting deletion of information relating to a content identifier and/or a category identifier.

34. A push network as claimed in Claim 32, wherein an information
providing terminal comprises means for transmitting a packet requesting
20 deletion of information relating to a content identifier and/or a category identifier.

35. A push network as claimed in Claim 26, wherein the decision means
comprises means which, if no packet having the same content identifier and/or
25 category identifier as passed packets arrives within a fixed time interval after the final packet has passed, deletes from the table the information relating to that content identifier and/or category identifier.

36. A push network as claimed in Claim 35, wherein the information providing terminal comprises means for transmitting, within the aforementioned fixed time interval, a dummy packet to which a prescribed content identifier and/or category identifier has been added.

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37. A push network as claimed in Claim 26, wherein the decision means comprises means for deleting from the table information relating to a content identifier and/or a category identifier when it receives a packet giving notification that receiving has been completed, said packet having been sent
10 from a node or user terminal that has received packets with the corresponding content identifier and/or category identifier.

38. A push network as claimed in Claim 27, wherein the registering means comprises means for receiving a request packet in which has been written a
15 content identifier and/or a category identifier notified by a user, and means for registering content identifier and/or category identifier related information in the table in accordance with the content identifier and/or category identifier written in the request packet received by the aforementioned receiving means.

20 39. A push network as claimed in Claim 27, wherein one registering means is provided for a plurality of decision means, said registering means comprising: means for storing, in correspondence with content and/or category, information indicative of the information providing terminal constituting the source of packets with that content and/or of that category; means for searching
25 for a route from that information providing terminal to a given user terminal in accordance with the stored contents of this storage means; and means which, in accordance with the result of the search conducted by this searching means, registers content identifier and/or category identifier related information

notified by a user, in the tables of the decision means along the route in question.

40. A push network as claimed in Claim 27, wherein a separate registering
5 means is provided for each decision means.

41. A push network as claimed in Claim 40, wherein a registering means
comprises: means for storing, in correspondence with content and/or category,
information indicative of the information providing terminal constituting the
10 source of packets with this content and/or of this category; means for searching,
in accordance with the stored contents of this storage means, for a route from
that information providing terminal to a given user terminal; and means for
transferring an arriving request packet in accordance with information, written
in the request packet, regarding the route to the information providing
15 terminal; wherein this transferring means includes means which, when there is
no information in an arriving request packet regarding the route to the
information providing terminal, writes said information in that request packet,
in accordance with the routing information found by the search means.

20 42. A push network as claimed in Claim 40, wherein a registering means
comprises: means for storing, in correspondence with content and/or category,
information indicative of the information providing terminal constituting the
source of packets with that content and/or of that category; means for searching,
in accordance with the stored contents of this storage means, for a route to the
25 information providing terminal written in an arriving request packet; and
means which, in accordance with the result of the search by this search means,
updates the routing information in the aforementioned request packet.

43. A push network as claimed in Claim 40, wherein a registering means comprises means for storing, in correspondence with information relating to the address of an information providing terminal, said information having been written in an arriving request packet, information relating to an output port to
5 be used for routing.

44. A push network as claimed in Claim 40, wherein a registering means comprises: means for sending an arriving request packet to all output routes connected to the local node; means for writing in the request packets
10 information relating to the sending history of this sending means; means for detecting, in accordance with this sending history information, the number of hops made by a request packet; and means which, when the same packet arrives from a plurality of routes, selects one of these packets in accordance with the results obtained by this detection means.